

What is claimed is:

1. A method of processing an image of a tissue sample microarray, comprising:

5 placing a plurality of tissue samples in an array on a microscope slide;

treating simultaneously all of the tissue samples on the microscope slide with a substantially identical treatment;

10 scanning each of the tissue samples and generating image signals representative thereof;

storing the tissue sample image signals;

indexing stored images of the tissue samples.

15 2. A method of processing an image of a tissue sample microarray according to claim 1, wherein the tissue samples comprise microarray tissue sample dots.

20 3. A method of processing an image of a tissue sample microarray according to claim 2, further comprising:

retrieving a stored image of at least a portion of one of the dots; and

displaying the stored image.

25 4. A method of processing an image of a tissue sample microarray according to claim 2³, wherein the displayed image is a low magnification image of a dot.

30 5. A method of processing an image of a tissue sample microarray according to claim 2⁷, wherein the displayed image is a high magnification image of at least a portion of one of the tissue dots.

6. A method of processing an image of a tissue sample microarray according to claim 2, wherein scanning the microarray dots further comprises generating a plurality of image tiles and combining the image tiles into a dot image.

7. A method of processing an image of a tissue sample microarray according to claim 2, wherein the treatment comprises staining the plurality of tissue samples in the array on the microscope slide.

8. A method of processing an image of a tissue sample microarray according to claim 2, further comprising providing an output indication of a dot characteristic in a text format.

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~~8~~. A method of processing an image of a tissue sample microarray according to claim 2, further comprising:

generating a tentative dot grid array; and
providing a prompt to an operator to provide a command to align an element of a dot grid array scan area.

¹⁰
~~9~~. A method of processing images of a tissue microarray, comprising:

selecting at least a portion of a tissue sample image from a tissue image set of a stored microarray file which was generated from multiple tissue samples on a microscope slide simultaneously subjected to a substantially identical treatment, the stored microarray file including identifying information individualized for each of the stored tissue sample image sets; and

displaying at least a portion of the stored tissue image.

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~~10~~. A method of processing images of a tissue image microarray according to claim ¹⁰~~9~~, wherein the tissue image sets are dot images.

¹²
~~11~~. A method of processing images of a tissue image microarray according to claim ¹¹~~10~~, wherein the portion of the stored tissue image is displayed remotely.

¹³
~~12~~. A method of processing images of a tissue image microarray according to claim ¹²~~11~~, wherein the displayed image is manipulated remotely.

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~~13~~. A method of processing images of a tissue image microarray according to claim ¹³~~12~~, wherein the displayed image is a low magnification image.

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~~14~~. A method of processing images of a tissue image microarray according to claim ¹⁴~~13~~, wherein the displayed image is a high magnification image.

¹⁶
~~15~~. Apparatus for processing an image of a tissue sample microarray, comprising:

a microscope having a digitally controlled stage for carrying and positioning a microscope slide having a tissue sample microarray thereon;

an imager connected to the microscope to receive at least a portion of a magnified image of the microarray and generating signals representative thereof;

a processor coupled to the imager for receiving the

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images and storing them with identifying them as a microarray and identifying individual characteristics of the tissue sample images comprising the stored microarray image; and

5 a display for displaying at least a portion of one of the tissue sample images.

¹⁷
16. Apparatus for storing a microarray image, comprising: a storage medium containing a plurality of digitized images of identically treated tissue samples from a microscope slide, each of the tissue samples comprised of at least one tissue sample image, each tissue sample image having associated with it identifying data, the identifying data being stored on the storage medium.

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